A Novel Approach to Studying Consumer Behavior for the Tourism and Hospitality Industries Using Verbal Analysis Protocols and Wireless Audio-Visual Observation*

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To understand consumer behavior, it is essential to obtain accurate information collected in real-life environments. It is therefore important to use diverse methods and types of equipment when performing consumer research. This paper highlights the benefits of using verbal analysis protocols (VAP) in conjunction with wireless audio-visual observation (WAVO) technology for data collection in consumer research. The uniqueness of the approach lies in its ability to provide *in situ* information. The new approach facilitates the use of consumer input to direct innovation and consumer-oriented product development in the tourism and hospitality industries.

Keywords: consumer research, field study, verbal analysis protocol (VAP), observation, product development, service development

Introduction

The study of accurate information gathered in real-life environments is essential for understanding consumer behavior in variable situations. This necessitates the use of diverse methods and equipment when performing consumer research (Kingstone, Smilek, Ritsic, Friesen, & Eastwood, 2003; Banwell, Hinde, Dixon, & Sibthorpe, 2005; Mikkelsen, 2011; Glanz, Bader, & Iyer, 2012). Consumers select different kinds of products and services by weighing several simultaneous needs whose origins may be extrinsic or intrinsic (Olson, 1972; Blackwell, Miniard, & Engel, 2006; Solomon, Bamossy, Askegaard, & Hogg, 2006; Strack, Werth, & Deutsch, 2006).

In addition to the consumer's need for a product or service, their purchase decisions will be significantly influenced by their past experiences (Blackwell et al., 2006; Strack et al., 2006) and expectations of product

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quality. These previous experiences are known as intrinsic cues. However, consumers are also exposed to an enormous number of environmental stimuli (“extrinsic cues”) that may influence their decisions (Olson, 1972; Hamlin, 2010). Therefore, data on consumer behavior and product selection should be collected in contexts where consumers can use information they consider relevant to the decision-making process. As such, data collected in laboratories or via surveys and questionnaires may have little relevance to real-world decision-making (Ericsson & Simon, 1993; Makri, Blandford, & Cox, 2011).

In the tourism and hospitality industry, successful product and service management requires the constant exploitation of novel consumer-oriented research approaches. To this end, this paper presents a novel state-of-the-art approach to consumer research based on a verbal analysis protocol (VAP) that is used in conjunction with wireless audio-visual observation (WAVO) technology to collect information about consumer behavior in real-life tourism and hospitality environments. The paper also discusses environments in which the new approach can be applied.

Methods

The novel approach was piloted and developed during a study conducted in a real-life supermarket setting. The overall pilot study design has been described at length and is based on WAVO of subjects as they make their purchase decisions in conjunction with a think-aloud protocol (Saarela, Keinänen, & Rissanen, 2012; Saarela, 2013; 2014; Saarela, Kantanen, Lapveteläinen, Mykkänen, Karppinen, & Rissanen, 2013; Saarela, Lapveteläinen, Mykkänen, Kantanen, & Rissanen, 2013).

In brief, the approach relies on three pieces of technology: the consumer’s unit (a microphone and a camera attached to the consumer’s head), the researcher’s unit (a microphone), and a unit located inside a shopping cart operated by the technician. The researcher was responsible for implementing the conversational VAP by walking with the study subject and periodically reminding him or her to keep thinking aloud while doing their shopping. The researcher responded to the subject only via nonverbal signals (nodding the head, making eye contact, etc.) to show that she was following the subject’s thoughts and that she was interested, or by making a neutral comment. If the subject stopped speaking for a while (at most 15s-60s depending on the circumstances), the researcher used standardized non-leading sentences to encourage dialog, such as “what are you thinking?”. In the standard VAP, the researcher does not respond to the subject’s questions or comments to avoid interrupting the process (Ericsson & Simon, 1993).

All of the gathered data (including audio-visual material) were analyzed using Noldus’ Observer XT 2.0 software package. The verbal analysis data were sorted using a database program and quantitative data were processed using SPSS.

Results

The simultaneous use of multiple data-gathering methods makes it possible to collect several forms of qualitative and quantitative information by recording data simultaneously from different perspectives and sources, namely, the consumer’s visual range, the wider study environment (which provides useful contextual information), and the consumer’s verbalizations. Rich, real-time data are collected by recording the subject’s comments and point of view. Table 1 illustrates the wide range of data that can be gathered using the new approach by listing all of the data collection methods that were used in the pilot supermarket study alongside the qualitative and quantitative information obtained by each method.

Table 1

Data Collection Methods Used During the Supermarket Shopping Study and Details of the Qualitative and Quantitative Data Gathered

Method/data collector	Variables/themes on which quantitative and qualitative data were collected
Initial conversation and orienting interview with subject/researcher	Notes (recorded in the research diary) were made providing general and relevant information concerning the consumer's background, presence, and behavior based on comments made during small talk. Recorded information concerning products on consumer's shopping list (average 10 items per list): Manufacturer and brand; Frequency of selection of the product; Scope for replacing the product; Importance of special offers, product demonstrations, and advertisements.
VAP/researcher Wireless audio documentation during VAP/technician	Consumer's food choice decision paths and individual decision processes. Differences between the selection of familiar products, unfamiliar products, and impulse purchases. Selection factors governing food choice and explanations: Consumer's habits, whether they usually buy specific selected products, how often they buy a given product, how they normally go about collecting products, etc.; General product factors that bear on consumer's needs, attitudes, and values, e.g., speed and ease of preparation, price, health effects, being organic, novelty, freshness, being locally produced; Issues related to product packaging, e.g., size, appearance, labels, ease of opening, etc.; Preferences concerning product characteristics, e.g., ingredients, taste, texture, etc.; Comments relating to nutrition and energy/fat/carbohydrate/sugar/fiber content.
Manual observation during VAP/trained assistant	Duration of the shopping trip. The order in which the consumer collected products. The following variables were observed during the selection of every product: Whether the consumer paid attention to the supermarket's signals; Whether the consumer looked at shelf markings/labels on the front of package/elsewhere; Whether the consumer requested help from a salesperson/researcher. Amount of consumer movement in front of a product category: a lot/a moderate amount/relatively little. Number and names of products considered before making final selection. Placement of the ultimately selected product on the store's shelves: high/middle/low. Time taken to select product: much/average/little. Reason for product choice. Whether the product had been on the consumer's mind prior to entering the store.
Wireless visual observation during VAP/technician	The technician examined the same variables as were considered during the manual observation to provide verification of the results and also made some additional observations using the cameras: Camera on trolley: Used to trace the consumer's walking route so it could be recreated; Used to observe stimuli in the shopping environment, e.g., shelf labels, ranges of products, accessibility of sales staff, etc.; Camera on consumer's head: Used to gather data on which products the consumer examined, the timing and duration of the examinations, and the number of products that were examined.
Product analysis during VAP/researcher and trained assistant	Information on the following aspects of each selected product was recorded: Product name, manufacturer, and package size; Energy content (kcal/100 g) and contents of fat, carbohydrates, and fiber (g/100 g); All the nutritional labels on the front of the packaging (GDA data, the Finnish Heart Symbol, labels related to energy, fat, carbohydrates, sugars, fiber, etc.); Number of labels on each package; Price of product in €kg, €l; Photo of product (for qualitative photo analysis); Product's representativeness of typical choice; Frequency of product usage; Whether the consumer paid attention to the labels on the front of the packaging, or the product's nutritional data; Difficulty/ease of choosing the product; The extent to which the consumer was thinking about weight management when selecting each product; The consumer's self-assessment of product suitability for weight management.

(Table 1 continued)

Method/data collector	Variables/themes on which quantitative and qualitative data were collected
Questionnaire on nutrition knowledge after VAP exercise	The sources the subject used to gather nutrition information and the frequency at which they sought such information. Fifty three structured questions were asked relating to the subjects': Understanding of nutritional terms (energy, fat, carbohydrates, and especially sugar and fiber); Awareness of dietary recommendations; Knowledge of food sources and which foods contain which nutrients; Awareness of package labels (GDA, Finnish Heart Symbol, and fiber content).
Final interview and feedback conversation/researcher	Subjects were asked various structured and open questions about their: Behavior at the supermarket; Habits at home before and after shopping, and when making purchases; Opinions about the supermarkets' environment; Self-assessment of the frequency at which they looked at information on food products' energy, fat, carbohydrates, sugar, and fiber contents; Ideas for improving the labeling of food packaging materials; Background, including demographic and nutritional characteristics; General experiences during the shopping trip.

Discussion

The method developed during the pilot study allowed the researchers to collect large amounts of accurate verbal and visual information on the interactions between extrinsic and intrinsic cues as consumers made their shopping decisions (Saarela, Kantanen, Lapveteläinen, Mykkänen, Karppinen, & Rissanen, 2013). The combination of VAP with other qualitative methods (observations and interviews) and wireless monitoring techniques provides a greater breadth of data and scope for analysis than was possible in earlier studies that relied solely on interviews or questionnaires from a retrospective viewpoint (Kingstone et al., 2003; Banwell et al., 2005; Mikkelsen, 2011; Glanz et al., 2012; Makri et al., 2011).

Since the supermarket pilot study was completed, several investigations using similar approaches have been conducted in different field environments including grocery stores, restaurants, hotels, and tourist attractions. The study protocols and technologies used in the pilot study were readily adapted for use in these diverse contexts. The novel VAP-WAVO approach thus seems to be well suited for a wide range of consumer and customer service situations where it is necessary to collect information on the interactions between people, products, and services (Savonia University of Applied Sciences, 2015).

The developed methodology generates both quantitative and qualitative data on consumer behavior and is compatible with a range of study designs that are relevant to the fields of tourism and hospitality. A major strength of the approach is that in interactive environments such as supermarkets, restaurants, and hotel receptions, study subjects may find it more natural to communicate with a person who accompanies them than to talk to themselves. Therefore, by having the researcher walk with the subject while also recording their behavior using wireless monitoring devices, it is possible to collect extensive accurate qualitative data on extrinsic and intrinsic factors that affect decision-making and to obtain insights into consumers' thoughts during product selection. Our method also provides quantitative data from several different perspectives relating to product and service selection in real situations (Saarela et al., 2012; Saarela, 2013; 2014; Saarela, Kantanen, Lapveteläinen, Mykkänen, Karppinen, & Rissanen, 2013; Saarela, Lapveteläinen, Mykkänen, Kantanen, & Rissanen, 2013; Savonia University of Applied Sciences, 2015).

The methodology described herein provides large amounts of data on consumers' interactions with real-life environments. The uniqueness of the approach lies in its ability to provide *in situ* information, i.e., data obtained in real-time at the point where the consumer interacts with his/her environs. Such information cannot

be obtained using other methods (Saarela, Kantanen, Lapveteläinen, Mykkänen, Karppinen, & Rissanen, 2013). After-the-fact methods such as questionnaires or interviews require consumers to recall from memory details of their product/service selection experience, while methods that use simulated environments or laboratory settings may yield very different results to studies conducted in real-world environments (Ericsson & Simon, 1993; Makri et al., 2011).

The new approach is a useful technique that facilitates the use of consumer input to direct innovation in consumer-oriented product development within the tourism and hospitality industries. It also provides a way for conscious consumers to support and express their demands for more targeted services. Data collected using the VAP-WAVO technique provide new insights into purchase decisions and consumer behavior, which is likely to be useful when designing new products or shopping/purchase/consumer service environments to effectively meet the needs of targeted consumers or accommodate specific behaviors.

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